

AMENDMENTS TO THE CLAIMS

The below updated listing of pending claims is provided for the Examiner's convenience. This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (previously presented): An immunomodulatory polynucleotide/ microcarrier (IMP/MC) complex, comprising:

a polynucleotide covalently linked to the surface of a biodegradable micro carrier (MC), wherein said polynucleotide comprises the sequence 5'-CG-3', wherein the polynucleotide is greater than 6 nucleotides in length and wherein said MC is less than 10 μm in size.

Claims 2-3 (canceled)

Claim 4 (original): The IMP/MC complex of claim 1, wherein said microcarrier is a liquid phase microcarrier.

Claim 5 (original): The IMP/MC complex of claim 1, wherein said microcarrier is a solid phase microcarrier.

Claim 6 (original): The IMP/MC complex of claim 1, wherein said microcarrier is from 25 nm to 5 μm in size.

Claim 7 (original): The IMP/MC complex of claim 6, wherein said microcarrier is from 1.0 μm to 2.0 μm in size.

Claim 8 (original): The IMP/MC complex of claim 7, wherein said microcarrier is 1.4 μm in size.

Claim 9 (original): The IMP/MC complex of claim 1, wherein said microcarrier is cationic.

Claim 10 (original): The IMP/MC complex of claim 1, wherein said complex is antigen-free.

Claim 11 (original): The IMP/MC complex of claim 1, wherein said polynucleotide comprises the sequence 5'-T, C, G-3'.

Claim 12 (original): The IMP/MC complex of claim 11, wherein said polynucleotide comprises the sequence 5'-TCGX₁X₂X₃X₄-3' or the sequence 5'-X₁TCGX₂X₃X₄-3', wherein X₁, X₂, X₃, X₄ are nucleotides.

Claim 13 (previously presented): The IMP/MC complex of claim 12, wherein said polynucleotide comprises the sequence 5'-TCGTCGX₄-3'.

Claim 14 (original): The IMP/MC complex of claim 12, wherein said polynucleotide comprises a sequence selected from the group consisting of 5'-TCGTCGA-3', 5'-TCGAAAAA-3', 5'-TCGCCCC-3', 5'-TCGGGGGG-3' and 5'-TCGTTTT-3'.

Claim 15 (original): The IMP/MC complex of claim 1, wherein said polynucleotide comprises the sequence 5'-C, G, pyrimidine, pyrimidine, C, G-3'.

Claim 16 (original): The IMP/MC complex of claim 1, wherein said polynucleotide comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

Claim 17 (original): The IMP/MC complex of claim 11, wherein said polynucleotide comprises the sequence SEQ ID NO:1.

Claim 18 (original): The IMP/MC complex of claim 1, wherein said polynucleotide further comprises the sequence 5'-T, C, G-3'.

Claim 19 (original): The IMP/MC complex of any of claims 1, 11, 12, 13, 14, or 18, wherein said polynucleotide is 7 nucleotides in length.

Claim 20 (original): The IMP/MC complex of any of claims 1, 11, 12, 13, 14 or 18, wherein said complex further comprises an antigen.

Claim 21 (original): The IMP/MC complex of claim 20, wherein said antigen is an allergen.

Claim 22 (original): The IMP/MC complex of claim 1, wherein said polynucleotide comprises a phosphate backbone modification.

Claim 23 (original): The IMP/MC complex of claim 22, wherein said phosphate backbone modification is a phosphorothioate.

Claim 24 (withdrawn): A method of modulating an immune response in an individual comprising administering to an individual a composition comprising an immunomodulatory polynucleotide/microcarrier (IMP/MC) complex, said complex comprising a polynucleotide linked to a biodegradable microcarrier (MC), wherein said polynucleotide comprises the sequence 5'-C, G-3' and wherein said MC is less than 10 μ m in size, in an amount sufficient to modulate an immune response in said individual.

Claim 25 (withdrawn): The method of claim 24, wherein said microcarrier is a solid phase microcarrier.

Claim 26 (withdrawn): The method of claim 24, wherein said microcarrier is a liquid phase microcarrier.

Claim 27 (withdrawn): The method of claim 24, wherein said polynucleotide is covalently linked to said microcarrier.

Claim 28 (withdrawn): The method of claim 24, wherein said polynucleotide is non-covalently linked to said microcarrier.

Claim 29 (withdrawn): The method of claim 24, wherein said complex is antigen-free.

Claim 30 (withdrawn): The method of claim 24, wherein a Th1-type immune response is stimulated.

Claim 31 (withdrawn): The method of claim 24, wherein a Th2-type immune response is suppressed.

Claim 32 (withdrawn): The method of claim 24, wherein interferon-gamma (IFN- γ) is increased in said individual.

Claim 33 (withdrawn): The method of claim 24, wherein interferon-alpha (IFN- α) is increased in said individual.

Claim 34 (withdrawn): The method of claim 24, wherein levels of IgE is reduced in said individual.

Claim 35 (withdrawn): The method of claim 24, wherein said polynucleotide comprises the sequence 5'-T, C, G-3'.

Claim 36 (withdrawn): The method of claim 35, wherein said polynucleotide comprises the sequence 5'-TCGX₁X₂X₃X₄-3' or the sequence 5'-X₁TCGX₂X₃X₄-3', wherein X₁, X₂, X₃, X₄ are nucleotides.

Claim 37 (withdrawn): The method of claim 36, wherein the polynucleotide comprises the sequence 5'-TCGTCGX₁-3', wherein X₁ is a nucleotide.

Claim 38 (withdrawn): The method of claim 36, wherein said polynucleotide comprises a sequence selected from the group consisting of 5'-TCGTCGA-3', 5'-TCGAAAA-3', 5'-TCGCCCC-3', 5'-TCGGGGG-3' and 5'-TCGTTT-3'.

Claim 39 (withdrawn): The method of claim 24, wherein said polynucleotide comprises the sequence 5'-C, G, pyrimidine, pyrimidine, C, G-3'.

Claim 40 (withdrawn): The method of claim 24, wherein said polynucleotide comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

Claim 41 (withdrawn): The method of claim 35, wherein said polynucleotide comprises the sequence SEQ ID NO:1.

Claim 42. (withdrawn): The method of claim 24, wherein said polynucleotide further comprises the sequence 5'-T, C, G-3'.

Claim 43 (withdrawn): The method of any of claims 24, 35, 36, 37, 38 or 42, wherein said polynucleotide is 7 nucleotides in length.

Claim 44 (withdrawn): The method of any of claims 24, 35, 36, 37, 38 or 42, wherein said composition further comprises an antigen.

Claim 45 (withdrawn): The method of claim 44, wherein said antigen is an allergen.

Claim 46 (withdrawn): The method of claim 24, wherein said polynucleotide comprises a phosphate backbone modification.

Claim 47 (withdrawn): The method of claim 46, wherein said phosphate backbone modification is a phosphorothioate.

Claim 48 (previously presented): A kit, comprising:
an immunomodulatory polynucleotide/microcarrier (IMP/MC) complex, said complex comprising a polynucleotide covalently linked to the surface of a biodegradable microcarrier (MC), wherein said polynucleotide comprises the sequence 5'-CG-3', wherein the polynucleotide is greater than 6 nucleotides in length and wherein said MC is less than 10 μm in size; and
instructions for use of the IMP/MC complex in immunomodulation of an individual.

Claims 49-50 (canceled)

Claim 51 (original): The kit of claim 48, wherein said microcarrier is a liquid phase microcarrier.

Claim 52 (original): The kit of claim 48, wherein said microcarrier is a solid phase microcarrier.

Claim 53 (original): The kit of claim 48, wherein said microcarrier is from 25 nm to 5 μm in size.

Claim 54 (original): The kit of claim 53, wherein said microcarrier is from 1.0 μm to 2.0 μm in size.

Claim 55 (original): The kit of claim 54, wherein said microcarrier is 1.4 μm in size.

Claim 56 (original): The kit of claim 48, wherein said microcarrier is cationic.

Claim 57 (original): The kit of claim 48, wherein said complex is antigen-free.

Claim 58 (original): The kit of claim 48, wherein said polynucleotide comprises the sequence 5'-T, C, G-3'.

Claim 59 (original): The kit of claim 58, wherein said polynucleotide comprises the sequence 5'-TCGX1X2X3X4-3' or the sequence 5'-X1TCGX2X3X4-3', wherein X1, X2, X3, X4 are nucleotides.

Claim 60 (previously presented): The kit of claim 59, wherein said polynucleotide comprises the sequence 5'-TCGTCGX₄-3'.

Claim 61 (original): The kit of claim 59, wherein said polynucleotide comprises a sequence selected from the group consisting of 5'-TCGTCGA-3', 5'-TCGAAAAA-3', 5'-TCGCCCC-3', 5'-TCGGGGGG-3' and 5'-TCGTTTT-3'.

Claim 62 (original): The kit of claim 48, wherein the polynucleotide comprises the sequence 5'-C, G, pyrimidine, pyrimidine, C, G-3'.

Claim 63 (original): The kit of claim 48, wherein the polynucleotide comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

Claim 64. (original): The kit of claim 58, wherein the polynucleotide comprises the sequence SEQ ID NO:1.

Claim 65. (original): The kit of claim 48, wherein said polynucleotide further comprises the sequence 5'-T, C, G-3'.

Claim 66 (original): The kit of any of claims 48, 58, 59, 60, 61 or 65, wherein said kit further comprises an antigen.

Claim 67 (original): The kit of claim 66, wherein said antigen is an allergen.

Claim 68 (original): The kit of claim 48, wherein said polynucleotide comprises a phosphate backbone modification.

Claim 69 (original): The kit of claim 68, wherein said phosphate backbone modification is a phosphorothioate.

Claim 70 (previously presented): A kit, comprising:
an immunomodulatory polynucleotide/microcarrier (IMP/MC) complex, said complex comprising a polynucleotide covalently linked to the surface of a biodegradable microcarrier (MC), wherein said polynucleotide comprises the sequence 5'-CG-3' and wherein said polynucleotide is 7 nucleotides in length; and
instructions for use of the IMP/MC complex in immunomodulation of an individual.

Claim 71 (original): The kit of claim 70, wherein said polynucleotide comprises the sequence 5'-T, C, G-3'.

Claim 72 (original): The kit of claim 71, wherein said polynucleotide consists of the sequence 5'-TCGX₁X₂X₃X₄-3' or the sequence 5'-X₁TCGX₂X₃X₄-3', wherein X₁, X₂, X₃, X₄ are nucleotides.

Claim 73 (previously presented): The kit of claim 72, wherein said polynucleotide consists of the sequence 5'-TCGTCGX₄-3'.

Claim 74 (original): The kit of claim 72, wherein said polynucleotide consists of a sequence selected from the group consisting of 5'-TCGTCGA-3', 5'-TCGAAAAA-3', 5'-TCGCCCC-3', 5'-TCGGGGG-3' and 5'-TCGTTTT-3'.

Claim 75 (original): The kit of claim 70, wherein said polynucleotide further comprises the sequence 5'-T, C, G-3'.

Claim 76 (original): The kit of claim 70, wherein said complex is antigen-free.

Claim 77 (original): The kit of claim 70, further comprising an antigen.

Claim 78 (original): The kit of claim 77, wherein said antigen is an allergen.

Claim 79 (original): The kit of claim 70, wherein said polynucleotide comprises a phosphate backbone modification.

Claim 80 (original): The kit of claim 79, wherein said phosphate backbone modification is a phosphorothioate.

Claim 81 (original): A composition comprising an IMP/MC complex of claim 1 and a pharmaceutically acceptable excipient.

Claim 82 (original): A composition according to claim 81, wherein the composition is antigen-free.

Claim 83 (original): A composition according to claim 81, wherein the composition further comprises an antigen.

Claim 84 (original): A composition according to claim 83, wherein the antigen is an allergen.